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THE EDUCATION OF CHILDREN WITH DEFECTIVE
VISION.*

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IN this paper it is proposed to present a critical review of the Montessori system of education, particularly in reference to its possibilities in the education of children with defective vision, for which purpose it has been recommended as ideal; and further to draw comparison between this system and that of the "Myope Classes" which originated in this country for this same purpose, and which after an experience of seven years may be taken to have shown what good points they possess. A detailed account of the present development of the myopes classes will be added.

THE MONTESSORI SYSTEM.

IN considering any scheme of education it is well to understand how it came into existence, and in particular to recognise the local circumstances that gave a reasonable ground for its vogue. Next,

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it is well to examine the "scientific basis" on which it is founded, if indeed there be a claim for such basis. Lastly, it is well to inquire how far the local conditions of the place of its birth find a parallel in other places where it is proposed to transplant it in its original or modified form.

The Montessori scheme of education is of Italian origin. It was first devised as a mode of instruction for mentally defective children. Its one special feature, when considered in relation to the existing modes of education then in vogue in Italy, was that there was a real attempt to allow for the personality of the child. The scheme did not aim at a uniform drilling of the minds of the children, but it aimed at awakening whatever of good there might be in the particular child before the teacher. As practised by Madame Montessori the scheme quickly justified itself, for it was far in advance of anything known in the place of its birth. In its revolt against a cast-iron uniformity it came back to Nature and accordingly was bound to succeed, and it did succeed.

Subsequently the scheme was applied to the teaching of normal children, and in so far as it followed the natural lines of allowing for the personality of the child it was an advance on any method that ignored this vital point.

Later the authors of the scheme developed an elaborate scientific argument, asserting the basis upon which the scheme was founded. That argument is to be found in a weighty volume, 'Pedagogical Anthropology.'*

It is conceded at the outset that the scheme was a distinct advance in method upon any educational modes existing in the place of its origin. But when it is proposed to transplant such a scheme to another habitat it is well first to ask if the conditions existing in the proposed new sphere of exploitation make it desirable that it should come into working there, not merely as a new and possibly useful assistant or even competitor, but as a destructive rival of existing methods. The introduction of the scheme into England has been strongly advocated and as vigorously opposed. And for myself I am in opposition to its introduction, for this reason, that the grounds that made for the success of the scheme in Italy do not exist in this country; indeed, I very much doubt if they ever have existed here.

Uniformity is a thing that is totally foreign to the mental habit of the inhabitants of our little islands. We are individualists from

* 'Pedagogical Anthropology,' by Marion Montessori. Translated by Frederic Taber Cooper. London, 1913.

our youth up. And so strong is the recognition of this fact that the schoolmasters do not attempt to assert any iron sway of uniformity in our public school system of education. It may be said, with much truth, that the chief educators of our country are the children themselves; in the friction of their several individualities there is an influence for good better than all the schemes of professed educationalists. Under such conditions it matters little what may be the theory of our education, the practice remains correct, and that is the chief thing.

The same thing exists even under the apparently set forms of education in our elementary schools, all of which have to conform to a "code" set by a Government board. Despite the code there is the same play of individuality in the elementary school, the Council schools, or the old "Board schools" of a more familiar nomenclature. And this recognition of personality is the more pronounced, so far as the class-room is concerned, in the infant departments where alone any comparison with a scheme such as the Montessori could be made. The fact is that all the premises advanced by Madame Montessori have been recognised in this country for generations, and have been acted upon to such an extent that no one has ever thought of talking about them.

To make an exact comparison with the Montessori scheme one should confine the judgment to the schools for mentally defectives. In this branch of education I dare assert there is no better equipped country in the world than England. In England alone there are 183 certified elementary schools for these children, with an average number of 13,110 children on the register; and from my knowledge of the London schools I would assert that it would be difficult to better the modes of training therein adopted. The real reason for the success of these schools lies in the nature of our national character. Not only is there a respect for the individuality of the child with the corresponding desire to cultivate it, but also a subtle sense of sympathy with the weak and disabled, the possession and exercise of which can alone enable the teacher to tolerate a constant association with human beings who are below the level of normal mentality and character. The Montessori system in its one good feature, the feature that has made it a success in the country of its origin, has been anticipated long ago in this country, and to attempt to import it into this country is truly a carrying of coals to Newcastle.

Secondly, it is worth while considering the "scientific basis" for this scheme as propounded in that weighty volume 'Pedagogic

Anthropology.' Madame Montessori avows herself a disciple of Cesaro Lombroso. What he claimed to have done for criminal anthropology the author of this book seeks to do for pedagogy. She writes: "The credit rests with Italy for having rescued anthropology from a sort of Olympus, and led it by new paths to the performance of an eminent and practical service." Until these new paths were discovered, "Anthropology failed to raise itself from the status of a pure and aristocratic, in other words, a superfluous science, a status that prevented it from ranking among the sciences of primary importance." Lombroso's work has been subject to the most extensive and explosive criticism, and there is little left of the elegant superstructure of his criminal anthropology, save perhaps in the lines of the *feuilleton* of the halfpenny daily papers. So recent a piece of work as that entitled 'The English Convict: a Statistical Study,' by Dr. Charles Goring, proves conclusively from the life histories of 3000 convicts that there is no such thing as a predestined type of humanity "born to do evil," and that "there is no definite line of demarcation, no absolute difference in nature, as opposed to degree, between the human beings who are and those who are not criminal."

Madame Montessori's scheme of pedagogy is confessedly based on anthropology of the Lombroso type. She believes that certain marks are definitive of character, but her indications are inconsistent. In one part of the book the glory of the face is made the prime index of character; in another the hand is cited as the one and only indication of capacity—"We can judge from the hand whether a man is fitted for work or not." Putting aside the inconsistency, such claims as these when applied to educational methods are destructive of all sense of impartiality in the teachers. It is hard enough for the best balanced teacher to give due attention to the plain lumpish child when there is a fascinatingly pretty, possibly mischievously roguish, child in the next seat; but to teach the teacher that the lumpish child is a lump and therefore unworthy of the same attention as the rogue would be disastrous, for we are not all what we promise to be.

Lastly, I wish to consider this Montessori scheme as regards its suitability for the training of children with defective eyesight. At the outset there is this difficulty. Most of the children whose eyes are found so defective as to necessitate their receiving special educational attention are not discovered until such an age that they are no longer fit subjects for such an elementary scheme of teaching. This Montessori scheme deals only with the beginnings, and the affected children have for the most part passed that period when

discovered. But even supposing that there should be found a number of children of fit age and state of development, would the system be of advantage to them? If we take the claims of the scheme as set forth by its most enthusiastic supporters the answer is emphatically—No. One of the chief and most reiterated claims made on behalf of the scheme is that children taught by this system come to read, as it were unconsciously, fully two years before children taught by ordinary methods. Such an assertion, taking it at its face value, is quite enough to warrant us as ophthalmic surgeons withdrawing our support from the scheme. We do not want children to read two years earlier than they ordinarily do. To read early is no gain, in fact it means an ultimate loss. The child who gains an early facility with printed books learns to forsake the true methods of learning; it ceases to pester its seniors with questions that bubble up from its growing mind, it no longer worries into the why and wherefore of this and that object that it finds in the garden and field, for its little mind is awl with the first narcotic of its young life, it is learning to forget the real world in a sham fantasy of the book world. And on the physical side it is getting round-shouldered from much crouching over print, and withal possibly straining eyes that were never meant to do this sort of thing. Educationally there is no gain in early reading, rather the reverse. Physically early reading is a habit to be banned. A scheme that boasts this as a great merit, even if it be only in the mouths of injudicious supporters, is to be looked at askance.

It is said that the method of contact with the subject to be learned is the chief good of the scheme. Things are handled and touched, and not looked at. There is nothing new in this. There is not one of us who did not first learn to live by touch and not by sight; the baby at the breast is the ever recurring proof of this, but we soon find that of all our senses our eyes are those that give us the best and most ready appreciation of things. There are those who have to learn by touch—the blind have only this poor resource for their reading and writing. And there is no one who has not seen the best of these readers but must agree in the inferiority of touch as compared with sight. If this be so with the expert blind, how much more when we consider the first hesitating gropings of the little blind child.

To suggest that we should supplant the use of the sense of vision by that of touch as the chief of our educational methods is to propose a retrogression of the most pronounced character. It would be followed to its logical conclusion if it were proposed to do away with

our printed books and use Braille only. The *reductio ad absurdum* can be found in that striking story of H. G. Wells, 'The Valley of the Blind.'

THE MYOPE CLASS.

Special educational methods are necessary for children with defective sight, and there are methods which have been established in this country and carried on with every success. These classes are known as "myope classes" because the greater number of children have defective eyes from this cause. In 1913 I was permitted to give an account of these classes to this Section of the Society. In London there are now seven of these classes working in connection with the public elementary schools. Similar classes have been formed in Bolton, Birmingham, Leicester, Leeds, Oldham, Stoke-on-Trent, Nottingham, Exeter, Brighton, Bristol, Sheffield, and Liverpool. Besides, classes have been established in Scotland, and in not a few cities of the United States. To judge from the published reports from the States the myope class meets as real a need there as it does here, and its exploitation proves as successful.

The myope class is in its basis a very simple and natural affair. It does not claim any extraordinary virtue as an education revolution. But it is claimed for it that it fits a definite situation, and further that it is attractive to teachers and children alike, even though it demands greater skill in the former and more alertness from the latter.

This scheme of myope classes has been working for seven years; it is elastic enough to meet the necessities both of the young children and of the older children, from the ages of 5 to 14, the only ages for which special forms of educational treatment are required. Its principles can be adapted to the individual needs of children attending ordinary schools, both public and elementary, and not a few short-sighted children have been admitted to well-known public schools for girls and boys, and therein have followed satisfactorily their studies with such modifications in their particular interest as this myope scheme has suggested.

In the following pages there will be given an account of the present manner of working these classes in connection with the public elementary schools; it is in this connection that the greatest use has been made of the method, for the number of children with defective vision, of such a grade as prevents their taking safe advantage of the ordinary school curriculum but not such as to

necessitate their attendance at a school for the blind, is sufficiently large to afford ample material with which to put the scheme to the test.

Since my last account of these classes was given* there has been a development of the work of the classes along the lines originally drafted. The development has been particularly marked by the correlation of the teaching given in the special class-rooms with that taken by the children in association with the scholars of the normal elementary schools; and further in handicraft work. The curriculum falls into three parts: (1) Oral teaching, taken for the most part in



FIG. 1.†—This and subsequent photographs were taken at the first class, which was started seven years ago. A lesson in physical geography is in progress in a class-room in an ordinary elementary school. The front row is occupied by the myopes.

the normal schools; (2) literary work, taken in the special class; (3) handicraft work, also carried out in the special class. For the oral teaching the children are taken over to the associated normal school and drafted into those classes therein for which their attainment provides. They sit in the front row and engage in the ordinary work of the class, except that when any reading or writing work is to be done in connection with the course of study they take no part therein. Similarly they join with the normal children for singing, drill and games (such of them as may safely do so). Both in the

* 'Proc. Roy. Soc. Med.,' 1913, vi (Section of Ophthalmology), pp. 146-163.

† The blocks used in this article were kindly lent by the National Institute for the Blind.

normal school and in the special class much is made of action songs and musical exercises. Every effort is made to enlist the sympathies of the teachers of the normal schools with the work of these children,

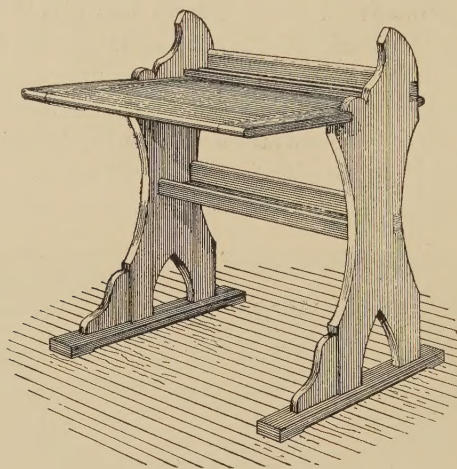


FIG. 2.—Desk in use in myope classes, designed by the author, showing use as table for handicraft. (Made by Messrs. Hammer & Co., Charing Cross, London.)

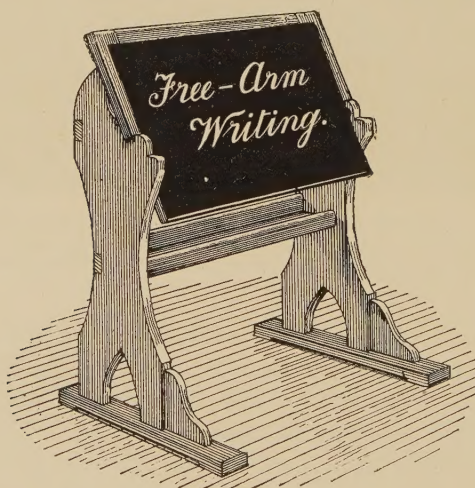


FIG. 3.—Myope desk in use as blackboard for free-arm writing.

so that though occasional scholars they shall be regarded as part of the ordinary school work. And experience proves that these arrangements can be carried through regularly without interference with the proper work and discipline of the normal school. The

children, on the other hand, learn to regard themselves as definitely associated with their normal comrades, to their great advantage, both in the immediate work of their training and for the future when they leave school. So soon as one of these oral lessons is completed the myope children return to their own class-room; there the teachers of the special classes proceed to develop the lessons given in the normal schools. The work becomes in this sense somewhat in the nature of what is known as "preparation" in the public school curriculum. The lesson taken is written out from memory on the

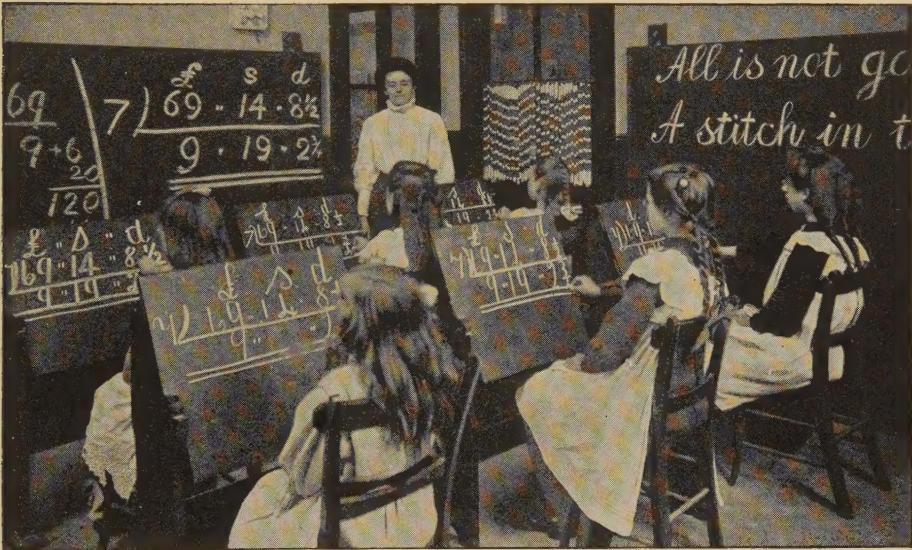


FIG. 4.—Arithmetic lesson in the myope class. The teacher uses the long wall blackboard, whilst each child has its own blackboard provided by the myope class desk. Note the heavy strong lines of the chalk writing, and the bold upright characters. The ordinary thin-lined straggly writing of the lecture theatre is quite inadmissible in these classes. Blackboard writing is an art to be cultivated.

blackboard with which each child is provided, catechism is given by the teachers of the myope class, who are familiar with the order of lessons given in the normal school, so that there is a very real fixation of the lesson in the minds of the children. There is further literary work given in the myope class of the sort that is usually written on paper in the normal school, but in these classes all this work is done on the blackboard, or on large printed sheets, which the senior pupils in the classes prepare as part of their work. The manner of printing these sheets is as follows: Large sheets of white

paper are hung up on the walls or blackboards of the room, and thereon are printed, by the use of rubber-faced type of 2 in. and 1 in. square, selected extracts from well-known literature of the kind that can be put to educational use, and also extracts from lessons in geography, history, and the like. Already the myope classes have collected in this fashion quite a library of sheets which are in constant use by both the junior and senior children. The work of printing these sheets is greatly liked by the children, indeed it has become a prize task for the best of the elder children.



FIG. 5.—Girls knitting. They are taught to work by feel and not by sight; only those who show an aptitude for the work are allowed to practise it.

Arithmetic is practised on the blackboards, teachers and children working together on the wall blackboards and on the individual boards. A great point is made in the development of mental arithmetic, so as to facilitate the association in the mind of ideas of figures without the adjuvant written symbols—many of the children get quite expert in the practice; this is an added safeguard against the excessive use of the eyes in near work. Further, arithmetic is associated with practical work in handicraft.

Handicraft.—The extension of this branch of the work has been given particular attention. The provision of suitable work is by no means a simple matter. The limitations necessarily introduced by

the fact that the eyes must not be used for any length of time in the stooping posture, and that the work must not be so fine as to require close application, prevent the use of some of the best, most practicable, and most educative forms of handiwork that can be exploited for school children. There is no better handiwork for boys than carpentry. It is of great interest to them, they make things that appeal to them by their form and utility. The work demands precision and care, and therefore is an admirable training in method and exactitude. The work grows under their hands, and there is



FIG. 6.—Children learning handicrafts. Any kind of work that will teach manual dexterity with the minimum of use of the eyes is admissible; no work that requires constant observation or inspection of small parts should be taught.

outward and visible sign of industry. The boy who puts energy into his work knows that there is fruit to his labour, for he sees it before him, and it is equally evident to him if his work has been done well and soundly or in a rough and slovenly fashion. But carpentry is not good for highly myopic eyes. The necessary drawing of plans, the taking of measurements, and the use of rules and scales, mean too much close work. But more prohibitive is the posture necessary for the effective use of most of the tools employed in the work. Boys are not vigorous of muscle in their upper limbs, and this lack has to be made up by the use of the weight of the shoulders. Sawing, planing, cutting with the chisel, and the like,

require muscular force, and the use of the shoulders tends to develop a stooping habit. At the same time the muscular effort is intensified by a closed larynx and forced contraction of the abdominal muscles and diaphragm, so that the very conditions of strain are induced that are most inimical to the fragile eyes of the short-sighted. These facts show how difficult it is to provide a suitable scheme of handicraft for these children.

(To be continued.)

A NOTE ON LYMPHOCYTOMATOSIS OR LYMPHOBLASTOMATOSIS, ESPECIALLY OF THE KIDNEYS.

By F. PARKES WEBER, M.D., F.R.C.P.

IN necropsies on children, and certainly on adults also, it is occasionally found that one or more of the viscera are partially or completely infiltrated with lymphocyte-like or lymphoblast-like cells, which separate the essential elements of the affected organ from each other, but apparently without greatly damaging them. Both kidneys are not very rarely infiltrated in this way, but the disease need not be altogether symmetrical, and one kidney may be affected without the other. A kidney thus diseased is large and pale, and at first sight may be mistaken for a "large white kidney" of chronic parenchymatous nephritis (the large white kidney of amyloid or lardaceous disease would have a somewhat harder and waxy consistence), but the change is not quite uniformly distributed through the whole organ. On microscopical examination the glomeruli and renal tubules are seen more or less widely separated from each other by a diffuse growth of lymphocyte-like or lymphoblast-like cells, but the infiltration is more extreme in some parts than in others. On examining a section under a low power the possibility of acute septic phlegmonous infiltration might suggest itself, I mean like that seen in portions of a kidney in a case of acute ascending pyelo-nephritis; in such inflammatory infiltrations, however, many of the cells are at once seen to be polymorphonuclears (pus cells) on examination under a higher power.

Lymphocytomatosis or lymphoblastomatosis may be defined (as it etymologically signifies) as a disease characterised by the appearance of lymphocytomata or lymphoblastomata, that is to say, by the appearance of tumour-like swellings consisting of lymphocyte-like or lymphoblast-like cells. Such lymphocytomata or lymphoblasto-

mata have, however, frequently been described under the heading "lymphosarcomata" or "round-celled sarcomata." In many recorded and unrecorded cases the patient's blood was never examined during life, but in cases in which it was examined the changes of lymphocytic leukæmia were found present in some and absent in others. Cases in which leukæmic changes are present in the blood may be described as leukæmic, or rather, lymphocythæmic, whilst cases in which the blood shows no signs of leukæmia may be distinguished as "aleukæmic" cases—that is to say, they are cases of "aleukæmic" lymphocytomatosis or lymphoblastomatosis of the kidneys or other organs.

Sometimes the change in the blood is not very characteristic. Thus, in the case of a boy, aged 6 years, whose case was described by Leonard Guthrie and W. D'Este Emery at the Medical Society of London, under the heading, "A Case of Fatal Lymphocythæmia" ('Trans. Med. Soc. London,' 1909, xxxii, pp. 90–101), there was a condition of typical diffuse symmetrical lymphocytomatosis (or lymphoblastomatosis) of the kidneys present, and yet the white blood corpuscles only numbered about 2000 per cubic millimetre of blood, though 80 per cent. of them were lymphocytes. At the necropsy on that case the kidneys were found uniformly enlarged by a firm white growth, which permeated all parts, though not absolutely uniformly; microscopically the renal tubules were seen to be very little destroyed, but widely separated from one another by lymphocytic infiltration. The authors remarked: "At first sight the tubules and glomeruli appear unaffected, simply separated from one another by a thick layer of the lymphoid tissue in which they are embedded; in some places this is three or four times the width of one of the tubules. On closer examination it is possible to detect that there has been a small amount of destruction of tissue, fragments of secreting epithelium being found within the lymphocytic mass. . . . The glomeruli appear normal, except that in some cases there are a few lymphocytes in the tufts. Bowman's capsule is well preserved, even where it is lying in contact with the lymphocytic infiltration, and the epithelium of the tubules is apparently normal." In regard to the appearance of the infiltrating cells the authors write: "The cells are almost devoid of protoplasm, and their nuclei suggest those of a small round-celled sarcoma rather than a true lymphocyte. There is also a very well marked reticulum between the cells; this is best seen in sections of the kidney, where the cells are widely separated and the whole tissue appears somewhat œdematous. In fact, when the case was first examined, lymphosarcoma

was considered as a possible diagnosis. . . . The new tissue is deposited apparently uniformly through the kidney, cortex and medulla being apparently equally affected."

Similar appearances were present in some of the cases of "Fatal Lymphocythæmia in Early Life" published by J. Graham Forbes and F. S. Langmead ('Proc. Roy. Soc. Med.,' 1908, i, Clin. Sect., pp. 129-177).

In the 'Transactions of the Pathological Society of London,' 1896

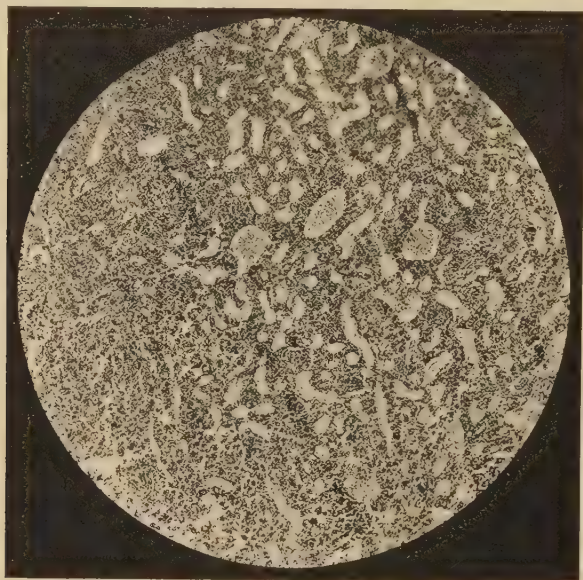


FIG. 1.—Microphotograph of kidney. ($\times 30$).

(xlvii, p. 117), I described, under the heading, "Diffuse Symmetrical Lymphosarcomatous Infiltration of the Kidneys of a Child," an obviously similar condition of the kidneys in a little girl, aged 5 years, but in her case the functions of the kidneys were decidedly affected by the infiltrating growth, for the urine examined shortly before her death contained a considerable amount of albumin and a few tube-casts, but no red blood cells. At the necropsy, at first sight, the kidneys resembled very "large white kidneys." Each kidney was symmetrically enlarged to about three or four times the natural size, its substance was pale on section, and the capsule stripped off easily. They gave no iodine reaction for lardaceous disease. A nearer examination showed that they were diffusely

infiltrated with some new growth, small portions only of the real kidney substance being distinguishable from the neoplasm, as darker stripes, here and there. In fact, what were at first supposed to be merely enlarged kidneys were in reality masses of new growth retaining the form of the kidneys, and containing the renal substance, or the remnants of the renal substance, interspersed in it. There were several wedge-shaped infarcts, probably due to pressure of the new growth causing obliteration of small arteries. In that case the



FIG. 2.—A portion of Fig. 1 under higher magnification. ($\times 100$). The renal tubules and glomeruli are seen embedded amongst the round-cells of the new growth.

walls of the cæcum and vermiform appendix, the diaphragm, part of the pericardium, and some of the mesenteric and mediastinal lymphatic glands were found infiltrated in the same way. The affection of the vermiform appendix constituted what might be called a "lymphocytomatous pseudo-appendicitis." By the kindness of Dr. D. Reid, who gave me excellent microphotographs from the sections, I am able to illustrate the microscopical appearances of the kidneys better than I have described them. Fig. 1 shows the renal tissue magnified 30 times, and Fig. 2 represents a small portion of Fig. 1, magnified 100 times. The convoluted tubules and glomeruli are seen widely separated from one another by the round cells of

the new growth. Unfortunately no examination of the child's blood was made.

In connection with the foregoing cases I would allude also to the following ones: In A. D. Fordyce's case (1) of "lymphosarcoma" in a boy, aged $4\frac{2}{3}$ years, the kidney showed "an entire separation of tubules and glomeruli from one another by immense numbers of rounded and polyhedral cells." During life the white blood cells were counted at 22,200 to the cubic millimetre of blood. In F. W. Higgs's case (2) of "lymphosarcomatosis" in a child the kidneys were large, "like large white kidneys," and evidently affected throughout with a diffuse neoplasm. The urine showed a cloud of albumin; no blood-count was apparently made. In S. W. Milner's case of "Sarcoma of both kidneys in a child" (3), aged $4\frac{3}{4}$ years, both kidneys were greatly enlarged and white; "microscopically the growth was a small round-celled sarcoma." The urine showed a thick cloud of albumin. Amongst much foreign literature Felix von Werdt's paper (4) on bilateral diffuse sarcomatosis of the kidneys, associated with a mediastinal tumour, may be specially referred to here. The patient was eleven years old, and the mediastinal tumour appeared to have commenced in the thymus gland. S. Fürstenberg and E. Büchmann (5), in their paper on a case of "sarcomatous degeneration" of the interstitial tissue of both kidneys in a patient, aged 45 years, suggested that their case represented a new group of renal tumours. F. von Werdt (*loc. cit.*) refers to several other foreign papers bearing on the same subject, including an inaugural dissertation by H. Wehland (Tübingen, 1896) on a case of "diffuse bilateral renal sarcoma" and a communication by Banti (6) on "bilateral sarcomatous infiltration of the kidneys." P. Grawitz (7) thought that the tumours described by Banti ought to be regarded as lymphosarcomata. A case of Sterling is likewise quoted from the Polish journal, 'Gazeta Lekarska' (1901), in which diffuse sarcomatosis of the kidneys was associated with diffuse sarcomatosis of the myocardium and prostate. Possibly some cases of bilateral sarcomatosis of the kidneys in animals ought likewise to be mentioned here, for instance, E. Ludwig's case of sarcoma of the liver with bilateral diffuse renal sarcomatosis in a hen (8), and a case of bilateral sarcoma in a wild rabbit recorded by A. E. Boycott and M. S. Pembrey (9).

On the whole subject of lymphocytomatous (especially symmetrical) diffuse permeation of viscera, whether leukæmic or aleukæmic (that is to say, whether associated with a leukæmic blood picture or without one), a recent work by Erich Fabian (10), on the diffuse

infiltrating form of leukæmia and lymphosarcoma, is very interesting, and contains numerous references to the foreign literature. The paper is illustrated by a coloured plate representing the macroscopic appearance of diffuse lymphocytic infiltration of the kidney; the organ in that particular case, as in other cases of the same kind, might be almost mistaken for a "large white kidney" of chronic parenchymatous nephritis.

Intimately connected with the present group of cases is the subject of "leucosarcomatosis," a term introduced about 1905 by Carl Sternberg.* In reality the term includes cases of lymphocytomatosis, for it includes all tumour-like (that is to say, sarcoma-like) leukæmic growths, whether the cells of the growth be of the lymphoid or myeloid series, associated with or followed by leukæmic changes in the blood. Cases of chloroma or chlorosarcomatosis constitute a special type of Sternberg's leucosarcomatosis, but a white mediastinal form, in which the mediastinal tumour seems to proceed from the thymus gland, is equally remarkable. Cases of leucosarcomatosis, other than chloroma, may in fact be regarded as cases of chlorosarcomatosis, but without the greenish colour from which chloroma derives its name. In a remarkable case of mediastinal leucosarcomatosis, which I hope soon (jointly with a colleague) to describe elsewhere, the patient, a young man, aged 18 years, whose blood picture was one of lymphocytic leukæmia, had a large mediastinal growth, apparently proceeding from the remains of the thymus gland and covering the outside of the parietal pericardium, like a blanket. A very similar case (in a man, aged 21 years), was described by W. Mager ('Wien. med. Wochenschr.,' 1909, lix, column 1877), and another one (in a man, aged 19 years) has recently been recorded by W. D. O'Kelly ('Dublin Journ. Med. Sci.,' 1914, cxxxvii, p. 409). In all three cases the mediastinal growth was found to be moulded over the parietal pericardium.†

* In a paper published in 1905 ("Zur Kenntnis des Chloroms" in Ziegler's 'Beiträge zur path. Anat. und zur allg. Path.' (Jena, 1905, xxxvii, pp. 437-454) Sternberg suggested (pp. 453-454) that the term "leucosarcomatosis" (Leukosarkomatose) should be employed for the cases which were formerly regarded as a combination of leukæmia and lymphosarcomatosis.

† Cf. also the specimen, No. 2309 b4, amongst Diseases of the Thymus and Thyroid Glands in the Museum of St. Bartholomew's Hospital, London. The specimen is from a girl, aged 5 years, who during life showed signs of acute lymphocytic leukæmia. In the museum description it is described as "sarcoma with lymphæmia," and is obviously an excellent illustration of mediastinal leucosarcomatosis, similar to those I have referred to. The thoracic contents show a tumour apparently growing from the thymus gland and occupying the anterior mediastinum. It lies upon the upper half of the pericardium, which it has infiltrated. The kidneys of the little girl were infiltrated with secondary deposits, consisting of small round cells.

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CONGENITAL HEART DISEASE AND ULCERATIVE SORE THROAT.*

By J. D. ROLLESTON, M.D.

A MALE infant, aged 11 months, was admitted to the Grove Hospital on December the 6th, 1914, certified to be suffering from diphtheria, on the eleventh day of disease. The father had always been healthy, but the mother had been an in-patient at the Brompton Hospital on several occasions for rheumatism with cardiac complications.

There were five other children in the family, viz. three boys, aged 20, 17, and 15 years respectively, who were all healthy, and two younger children, a girl, aged 7 years, suffering from deaf-mutism following scarlet fever, and a girl, aged 4 years, who was subject to attacks of sore throat.

The patient had been born at full term, but had been blue from birth and always delicate. The skin had always seemed cold to the touch. Clubbing of the fingers had been noticed since the age of 2 months. He had never cut a tooth.

On admission, the child appeared very ill. There was a membranous deposit on the tonsils, pillars, and uvula, and a profuse nasal discharge. The heart showed some right-sided enlargement; the sounds were clear but rapid. There was a trace of albumin in the urine. Temperature $102\cdot4^{\circ}$ F. A large dose of antitoxin was given

* Specimens of the case were shown at the Section for the Study of Disease in Children of the Royal Society of Medicine on January the 22nd, 1915, and are now in the Museum of the Royal College of Surgeons.

on admission and on the following day. A few organisms resembling diphtheria bacilli were found in the throat-culture taken on admission, but cocci were predominant, and had entirely replaced the bacilli in a second culture taken three days later. On December the 8th a loud systolic murmur was audible all over the præcordium. Both tonsils showed extensive ulceration, which in the following days spread over the uvula and palate. No Vincent's organisms were found in the throat smear.

On December the 13th stridor and a hoarse cough developed, and there was much difficulty in swallowing. These symptoms persisted,

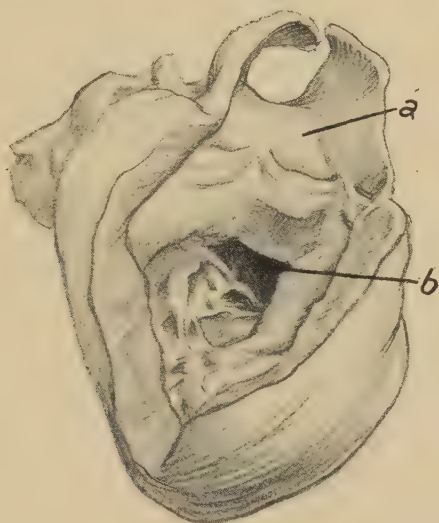


FIG. 1.—*a*. Aorta arising from infundibulum of right ventricle. *b*. Inter-ventricular foramen.

the temperature kept high, and the general condition became worse, until death took place from broncho-pneumonia on December the 19th, the twenty-third day of disease.

Necropsy (December the 20th).—Superficial ulceration of the tonsils, soft palate, frænum epiglottidis, right aryteno-epiglottidean fold, and deep ulceration of the laryngeal portion of the pharynx on each side, especially on the left, exposing the muscular tissue and eroding the thyroid cartilage. Areas of broncho-pneumonia were found in the lower lobes of the left lung.

The heart showed the following anomalies, for the demonstration of which I am indebted to Prof. Keith:

- (1) Transposition of the great arterial stems, the aorta arising

from the infundibulum of the right ventricle and the pulmonary artery from the left ventricle (*v.* Fig. 1). The walls of the right ventricle were considerably hypertrophied, being almost as thick as those of the left. Both ventricles entered into the formation of the apex.

(2) Marked deficiency of the interauricular septum, which was represented by a narrow band 1.5 cm. long by 0.5 cm. broad. The foramen primum lay anterior to it, and posteriorly there was a widely patent foramen ovale (*v.* Fig. 2).

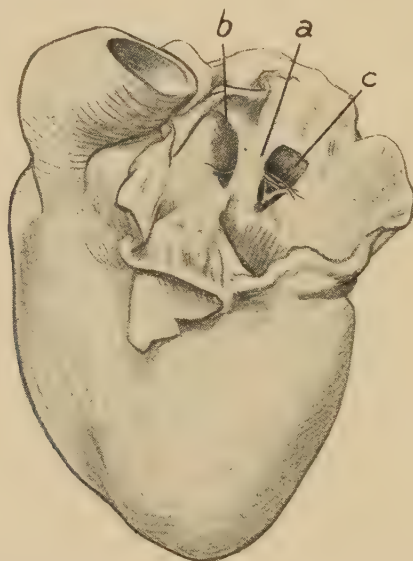


FIG. 2.—*a.* Deficient interauricular septum. *b.* Foramen primum. *c.* Foramen ovale.

(3) An interventricular foramen, 1.2 cm. in diameter in the “undefended space” (*v.* Figs. 1 and 2).

(4) Stenosis and hypoplasia of the pulmonary artery, which had only two cusps (*v.* Fig. 3). No gross changes were found in the other organs.

Of the multiple defects presented by this heart, the most interesting is the transposition of the aorta and pulmonary artery. This condition is one of the rarest congenital cardiac anomalies. Maude Abbott (1), in 1908, collected 44 cases from the literature, but in only 27 of them was the transposition complete as in the present case. Of the remainder 13 were instances of partial and 4 of corrected transposition.

According to Abbott the physical signs of transposition of the aorta and pulmonary artery are not characteristic, and the evidence of concomitant defects, especially patent ductus arteriosus or septal defects, is liable to distract attention from the possibility of so rare a lesion as transposition of the great vessels. In only a few instances has transposition been correctly diagnosed during life.

In the present case the congenital cyanosis, clubbing of the fingers, enlargement of the cardiac dulness, and loud systolic murmur made the diagnosis of pulmonary stenosis certain during life, but the other defects were not recognised ante mortem.

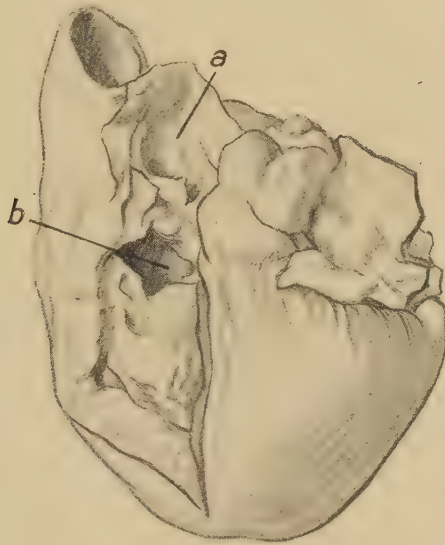


FIG. 3.—*a*. Stenosed pulmonary artery. *b*. Interventricular foramen.

The duration of life in complete transposition of the aorta and pulmonary artery is usually very short. Of Abbott's 27 cases, the three oldest patients were 11 years, 4 years, and $3\frac{1}{2}$ years respectively, while the ages of the remaining 24 ranged between 7 months and a few days.

The prolongation of life in my case is to be attributed to the defects in the auricular and ventricular septa which allowed a free mixture of the arterial and venous blood. It is noteworthy that in only 7 of Abbott's 27 cases was the interventricular septum defective; in the remaining 21 this septum was completely closed.

The family history of the present case is of interest, as it is infrequent to obtain a history of heart disease, congenital or acquired, in one of the parents. In Abbott's series of 412 cases of

congenital heart disease, in only 3 was there a history of acquired heart disease in the parents. Although the mother of my case had had rheumatic fever there was no history of her having suffered from it during pregnancy.

In George Carpenter's (2) series of 100 personal cases of congenital heart disease in only a few instances was there a history of rheumatic fever in the parents, but in no case was there any evidence of maternal rheumatic fever taking place during pregnancy.

How far maternal infections play a part in the causation of congenital heart disease is still uncertain, but it is only comparatively rarely that a history of rheumatic fever, typhoid, influenza, pneumonia, tuberculosis, syphilis, and other infections in the mother can be elicited.

It is now generally held that the frequency of foetal endocarditis in the causation of congenital heart disease has been considerably over-estimated, and there is now a tendency to attribute the majority of cardiac anomalies to developmental errors due to the same causes as the other deformities with which they are occasionally associated. Thus 14 cases of malformation of the heart were found by Keith (4) among 23 human foetuses and infants who displayed the following deformities: anencephaly, hydrocephalus, spina bifida, umbilical hernia, atresia ani, cleft palate, hare-lip, and stenosis of the oesophagus.

The exaggeration of the frequency of foetal endocarditis is probably due to the fact that congenital cardiac defects, especially pulmonary stenosis, are specially liable to endocarditis in early life.

The present case is no exception to the general rule that the subjects of congenital heart disease are very liable to succumb to acute infections. With regard to the nature of the infection, it was not diphtheria, although a few organisms morphologically resembling Klebs-Loeffler bacilli were present.

It should rather be regarded as an instance of ulcerative sore throat or pseudo-diphtheria, in which, as Goodall (3) has shown, rods resembling Klebs-Loeffler bacilli are occasionally found, though the clinical appearances differ from those of true diphtheria. I have previously recorded another example of ulcerative sore throat in which, as in the present case, the fauces, pharynx, and larynx were involved, death being due to sudden and profuse hæmorrhage from erosion of a vessel probably situated in the laryngeal portion of the pharynx (5).

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Abstracts from Current Literature.

Diseases of Ductless Glands.

The relation between suprarenals, thymus, and pancreas in children ('*Riv. di Clin. Pediat.*,' 1914, xii, p. 681).—L. M. Spolverini draws attention to recent studies in glands with internal secretion which afford evidence of the existence of two antagonistic systems—(a) the hypertensive (pituitary, thyroid, suprarenals); (b) the hypotensive (pineal, thymus, parathyroid, pancreas, genital organs). The functions of the various glands of the two systems do not act in an isolated manner, but close relations exist between them. The glands of most interest are the suprarenal, and, on the other hand, the thymus is of the more importance in infancy, hence it is essential to study the possible anatomo-physiological relations of these two glands in children of various ages dying of various diseases, in view of the functional antagonism between them. As the hypotensive action of pancreatic extract is one of the most active of these endocrinic glands, while the pancreas is functionally active from the first day of life, it appeared to the author opportune to extend his researches to the relations of the pancreas with the suprarenals. These researches dealt with the weight of the three glands, investigations as to adrenalin, and microscopic appearances. Comparing the weight of the two suprarenals, the fact became evident that, out of fifty-one cases, in eight only was the right heavier than the left; besides, the conjoint weight showed small variations from 1.90, 2.10, 2.30 grm. per capsule in both children three days old and eight years. The weight of the thymus varied from a minimum of 0.85 gr. in an infant of three months to a maximum of 12 gr. in one of three days. The weight of the pancreas varied from a minimum of 4.40 gr. in a child of fifteen months to a maximum of 39 gr. in one of twelve months. It was not found that any ponderal relation existed between thymus and pancreas on the one hand and suprarenal on the other; in some cases, however, the weight of the three glands was very low in each, or else that of the suprarenal and pancreas was high and that of the thymus relatively low. The comparison of the weight of these glands did not therefore give any definite results. With regard to the relation between the weight of these glands and the body-weight, that of the suprarenals was proportionate to that of the body. This was not the case, however, with the thymus and pancreas, which in most instances weighed less than the normal, both in an absolute sense and relatively to the body-weight, not *pari passu*, since in some cases the thymus was deficient while at the same time the pancreas was almost normal, and *vice versâ*. The thymus was the organ most at variance with the total body-weight. Estimation of adrenalin gave positive results

only in seven cases out of the fifty-one. Hence in a large majority of cases there is no adrenalin secreted in the suprarenals of infants. There was no relation between the weight of the glands and the presence or absence of adrenalin. The characteristic reaction of adrenalin was most strongly positive in a child, aged 4 years, who died unexpectedly from an acute infection, and less intense in another child, aged 3 months, suffering from syphilis, who also died unexpectedly. The reaction was most frequently positive in children who had died of acute infection. A strongly negative reaction was met with in normal children with tubercular or syphilitic infection, although the weight of the glands was normal. Microscopic investigation revealed nothing noteworthy.

VINCENT DICKINSON.

Pineal gland insufficiency in children (*Riv. di Clin. Pediat.*, 1914, xii, p. 848).—**L. M. Spolverini** records the case of a girl, aged 8 years, with precocious development of the external genitals, and growth of pubic hair in contrast with undeveloped intellect. Menstruation was absent, the mammae enormously developed, while the limbs remained small. There was considerable adipose tissue, which is unusual in pineal insufficiency, wasting and cachexia being the rule. Radiography of the skull showed disappearance of the sagittal and coronal sutures, and marked tendency to general hyperostosis of the base of the skull; the lambdoid suture was intact. The osseous crests were wavy, especially in correspondence with the ethmoidal plane, and on the internal surface of the frontal were digitiform impressions having a tree-like appearance and which corresponded with the convolutions of the anterior cerebral lobes. The direction of the occipital foramen was nearer than normal to the horizontal plane, so that a prolongation of the opistho-basilar line descended more towards the alveolar margin. The sinuses were small and some obliterated, the sphenoid sinus also was small. There was but slight hollowing of the region of the sella turcica, which was small; the middle cerebral fossa was deeper than normal. The whole skull approached the oxycephalic type.

VINCENT DICKINSON.

Clinical and metabolic studies of a case of hypopituitarism (*Amer. Journ. Med. Sci.*, 1913, cxlvi, p. 731).—**De W. Stetten** and **J. Rosenbloom** describe a very marked case of hypopituitarism with infantilism of the Froeblich type. At 10 years of age the patient was noticed not to be growing properly. Up to this time he had suffered from enuresis, which ceased the next year. Then headaches developed with gradual failure of sight from a progressive bitemporal hemianopsia. At the age of 22 years he was practically blind. His development was infantile with no secondary sexual development. An operation was performed by the infranasal sublabial transphenoidal approach, and a cyst was opened which contained about an ounce of fluid. As the result of this, coupled with the administration of desiccated pituitary substance (anterior lobe), the patient became free from headache, more alert mentally, but showed no improvement in sight or growth. Metabolic studies were made on the patient while in hospital after the operation, no pituitary substance being given at the time. It was found that on a fixed diet there was a high percentage of neutral sulphur and undetermined nitrogen in the urine.

REGINALD MILLER.

Recent studies on the involution of the thymus (*Riv. di Clin. Pediat.*, 1914, xii, p. 529).—**G. Rovere**.—Involution may be (a) natural or (b) accidental from chronic hypo-alimentation, acute fasting, the action

of X rays, after vaccination and diseases. The thymus attains its maximum development about puberty; it never entirely disappears, but may retain its function even in advanced years. Physiological involution begins at puberty and is not due, as many have asserted, to increase of connective tissue, but to a gradual and rapid atrophy of the parenchyma. Histologically, signs of reaction are not observed such as would suggest ultimate inflammation or necrosis; with the diminution of lymphocytes there is fatty degeneration of the reticulum, at first localised in the cortex and subsequently extending to the whole parenchyma. In accidental involution from diseases there is hardly any formation of fat, but of connective tissue of a marked sclerotic type derived partly from interstitial tissue and partly from the adventitious tissue of the intra-parenchymatous vessels. Involution due to fasting takes place solely by diminution of the specific elements. The behaviour, therefore, of the connective tissue is a criterion of great importance for the differentiation of the various forms of involution.

VINCENT DICKINSON.

A case of enlarged thymus and atelectasis (*'Lancet,'* 1915, I, p 72).—**J. C. McWalter**.—An infant, aged 3 months, was found dead in bed. At the post-mortem examination the body was found to be well nourished, weighing $12\frac{1}{2}$ lb. There was uncurdled milk still present in the stomach, and all the organs appeared to be healthy, but the thymus seemed enlarged—being bigger than the heart—whilst both lungs were of a somewhat purplish and collapsed atelectasoid condition. In the author's opinion the case seemed to show a connection between an enlarged thymus and an undeveloped shrunken condition of both lungs—almost atelectasis.

J. ALLAN.

The employment of skiagraphy in the diagnosis of the thymus gland (*'Med. Record,'* 1914, LXXXVI, p. 665).—**D. B. Delavan** believes that in any suspected case of enlarged thymus the X rays should be used for diagnostic purposes before any operation is undertaken.

F. R. B. ATKINSON.

A case of hypernephroma (*'Arch. of Ped.,'* 1914, XXXI, p. 844).—**L. Fischer** reports a case in a youth, aged 19 years. The symptoms were persistent hæmatoma and pain in the left lumbo-dorsal region followed by a swelling over the ninth intercostal space. The tumour was excised and proved to be a hypernephroma. Metastatic growths subsequently developed in the left scapula and left femur and liver, and death took place. A necropsy does not seem to have been performed.

J. D. ROLLESTON.

Adrenal precocity (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, p. 2286).—**J. F. Baldwin** reports a case of precocious development due to hypernephroma of the adrenal cortex. The patient was a boy, aged nearly 6 years. He commenced to talk and walk at nine months, and at ten months could talk and run well. Sexual development commenced when he was about eighteen months old, and at three years there was hair on the pubes and face, and his voice was like that of a man. When about five his abdomen began to increase rapidly in size, and though his height and weight were about normal for his years, his facial expression seemed to be that of a man of thirty-five or forty. The genital organs were apparently those of an adult, except that the testicles were small and not completely descended. Mentally his condition was that of a child. Death soon

ensued, and at the necropsy a large hypernephroma was found involving the left suprarenal cortex, while in the right adrenal a similar condition was commencing. The left kidney showed a chronic parenchymatous nephritis. The pituitary body, the pineal gland, and also the thyroid and parathyroid bodies were normal.

T. R. WHIPHAM.

Precocious maturity in girls (*'Arch. of Ped.,'* 1915, XXXII, p. 1).—**F. Beekman** records a case in a girl, aged $6\frac{1}{2}$ years. The family history was negative, and nothing abnormal was noticed in the child till the age of 4 years, when she began to have peculiar laughing spells. Soon after her breasts became prominent, and she began to bleed from the vagina periodically. Sometimes only a month elapsed between her periods, at other times several months. At the age of 6 years her bodily development was that of a young woman of 16. The X rays showed a large sella turcica, well-developed sinuses, and advanced ossification of the elbow, wrist, hand, ankle, and foot. The external genitalia were well developed, and the pubes was covered with long black hair. The heart, lungs, liver, and spleen were apparently normal, and neither kidney could be palpated. By bimanual examination the uterus seemed larger than would be expected at her age.

J. D. ROLLESTON.

Metrorrhagia at puberty (*'New York State Journ. Med.,'* 1914, XIV, p. 432).—**H. C. Coe** records two cases of metrorrhagia at puberty, and discusses the ætiology, pathology, prognosis, and treatment of this disease.

J. ALLAN.

Diseases of Muscles.

Amyotonia congenita (*'Psychiatr. en Neurol. Blad.,'* 1914, Nos. 4 and 5).—**B. Brouwer** and **J. C. Schippers** regard this condition, which was first described by Oppenheim in 1900, as a separate clinical entity. It does not depend on a developmental aura, but on disease. It is neither a neuritis nor a poliomyelitis, but an intra-uterine systemic disease, which affects the peripheral motor neuron exclusively to a varying extent. The writers review the literature and record a personal case in a boy, aged $4\frac{1}{2}$ years, who had had flaccid paralysis of the muscles since birth. Slight improvement, however, had taken place since then. There was marked hypotonus in all the joints. Circumscribed atrophy was not observed. The tendon reflexes were lost. Electrical excitability of the muscles was diminished without RD. The intelligence, sensibility, and special senses were not affected. The autopsy showed marked atrophy of the muscles with increase of connective tissue and fat, disappearance of the myelin in the anterior roots of the spinal cord, and considerable diminution in the number of the anterior cornual cells. The other systems were intact, and there was no change in the central nervous system to indicate arrest of development or disease.

J. D. ROLLESTON.

Myatonia congenita of Oppenheim (*'Am. Journ. Dis. Child.,'* 1914, VIII, p. 298).—**A. Strauch** describes a case in a female baby, aged 3 months, presenting some interesting and unusual features. Unlike the usual run of cases the facial nerves were involved. The infant could move at birth, but complete paralysis set in during the third week. All extremities were immobile with the exception of slight movement in ankles, toes, and fingers. The intercostals were paralysed, but the diaphragm contracted powerfully.

The respirations were 70-80 per minute. The tissues of the upper limbs were markedly flaccid so that the muscles were not distinguishable from the overlying tissues. The lower limbs were full and rounded, and there was no atrophy. The muscles of the face acted with appreciable slowness. The eyes followed a light, but there was horizontal nystagmus. The pupils reacted briskly. The reflexes, both superficial and deep, were absent. There was absence of faradic and diminution of galvanic irritability of muscles and nerves. The disease is usually noticed at birth, but it may occur during the first year (Collier and Wilson). The joints are loose, flaccid, and flail-like. The sphincters are normal, and sensibility is very rarely affected. The disease is chronic with a tendency to improvement, first noticed in the upper limbs, which may become normal. Death usually occurs from pneumonia or other form of respiratory disease. The muscles are little developed and lie amongst masses of hyperplastic interfibrillary fat tissue. The muscle fibres show indistinct striation and are very narrow. Congenital hypoplasia of the anterior horn cells has been found by Baudouin, Collier and Holmes. As regards diagnosis, poliomyelitis is excluded by the congenital character of myatonia, absence of febrile and vasomotor phenomena, the absence of atrophy, and the reaction of degeneration. Muscles in poliomyelitis recover in groups, and the stage of repair is much shorter. From polyneuritis it is diagnosed by the absence of changes of sensibility and of affections of the muscles of the heart and pharynx. Progressive muscular atrophy occurs later and shows localised myatrophia. In the Werdnig-Hoffmann type of spinal atrophy there are steady progress, exact localisation of atrophic process, and degenerative reaction.

CHRISTOPHER ROLLESTON.

Myositis ossificans (juvenile progressive type) ('*Lancet*,' 1914, II, p. 1247).—**G. H. Almond**.—The patient, a girl, aged 7 years, was healthy as a baby. Fifteen months ago, when aged $5\frac{1}{2}$, her right hip began to get stiff, and was followed by the left; the stiffness was intermittent at first, but they had gradually become more fixed. Present condition: can only walk about 100 yards, and tilts her pelvis up on both sides with each step. Child thin; muscles badly developed; slight list of the spine to the left with corresponding curves and raising of the right shoulder. A small patch of ossification can be felt close to the insertion of the biceps of the left arm, and a patch of hardness near the origin of the biceps of the right; ilio-tibial band on left side ossified from its origin to its insertion; hamstrings of left thigh ossified, a skiagram giving the appearance of a calcified shell enclosing the muscles; lozenge-shaped patch of hardness in the outer belly of left gastrocnemius; no definite patches of hardness or ossification made out in the muscles of the spine or trunk.

J. ALLAN.

Myositis ossificans following a single trauma ('*Journ. Amer. Med. Assoc.*,' 1914, LXIII, p. 1452).—**P. Oliver** reports two cases of myositis ossificans following a single injury. One was a man, aged 35 years, and the other a girl, aged 12 years, who came complaining of pain and disability of the left elbow. Six weeks previously she had fallen, striking the forearm. A posterior dislocation of both bones of the forearm was diagnosed and reduced. Rest for a week was followed by massage and motion. After a few weeks, disability became more marked. On examination, a hard mass in the flexure of the left elbow was felt. The forearm could be flexed to 100° , and extension also showed some limitation. The Röntgen rays

revealed a shadow extending into the musculature of the arm, attached at its lower end to the tip of the coronoid process. It consisted of two distinct parts, the lower about the size of the radial head and the same density. The upper part was pointed, irregular, and attached to the lower by a narrow stem. There was also noted ossification in the periarticular structures and beneath the raised periosteum on the outer side of the humerus, and also an incomplete fracture of the external epicondyle. About four months after the injury a piece of cancellous bone was removed from the coronoid process, and with it a part of the brachialis anticus muscle. The growth involved the tendon and the body of the muscle. Four years later the patient complained of no disability, being able to work as a stenographer. Flexion was limited to 95° and extension only slightly. Just internal to the biceps tendon was felt a knob of bone firmly attached to the coronoid process. A corresponding mass was heaped up on the anterior surface of the humerus. Thickening about the condyles and a slight elevation at ulnar tubercle, besides a separate piece in the capsular structures, were apparent in the röntgenogram. T. R. WHIPHAM.

Dystonia musculorum deformans (*Med. Record*, 1914, LXXXVI, p. 1000).—**H. Climenko** describes a case similar to those recorded by Oppenheim under this title in 1911. Other observers have given the condition other names: "tonic torsion neurosis," "general tic, with tonic changes," "tortipelvis," "progressive torsion spasm," opinions differing as to whether the condition is organic or functional. It is a chronic progressive disease of later childhood, hitherto only described in Russian or Galician Jews. Sex and heredity are of no importance. The earliest symptom is usually that of partial or total loss of function in one or more extremities, usually the lower, due to improper tonus innervation. As a result a very peculiar form of disordered gait develops, in which there is much torsion of the trunk on the pelvis. The movements of the affected parts are jerky and spasmodic, but not truly athetotic. There is a peculiar mixture of hyper- and hypotonus in the muscles of the affected limbs, which is characteristic. The face escapes. The deformities of the trunk (scoliosis, twisting of the pelvis, and lordosis) disappear in the recumbent attitude. Talipes may persist. The mental condition is usually normal. REGINALD MILLER.

Orthopaedics.

Hibbs' osteoplastic operation for Potts' disease (*Journ. Amer. Med. Assoc.*, 1915, LXIV, p. 398).—**B. P. Farrell**.—In performing the operation, a longitudinal incision is made directly over the spinous processes, through skin, supra-spinous ligament and periosteum, to the tips of the spinous processes. The periosteum is split over both the upper and lower borders of the spinous processes and the laminæ, and stripped back from them to the base of the transverse processes. The spinous processes are then transposed after partial fracture, so that they make contact with fresh bone, the base of each with its own base, and the tips with the base of the next below. The adjacent edges of the laminæ being absolutely free from periosteum, a small piece of bone is elevated from the edge of the laminæ and placed across the space between them, its free end in contact with the bare bone of the laminæ next below it. The lateral articulations are exposed and the cartilage is removed by a very small curette. This adds to the extent of the fusion. The lateral walls of periosteum and the split supra-spinous

ligament are brought together over these processes by interrupted chromic catgut sutures. The skin wound is closed by silk, and a steel brace applied. Of 158 patients operated upon, seven have died, the cause of death in each instance being extrinsic and not due to the operation, and four have required re-operation. With these exceptions, the results have been eminently satisfactory, inasmuch as, barring three who were paralysed when they came to the hospital, all the symptoms of Pott's disease other than the deformity have disappeared; all the patients who have been operated on for a longer period than one year are without apparatus, and are able to carry on the ordinary avocations of life, whether play or business.

T. R. WHIPHAM.

Bone transplantation (Albee method) for the cure of tuberculous spine disease (*Journ. Amer. Med. Assoc.*, 1915, LXIV, p. 400).—C. M. Jacobs gives details of nine cases operated upon, and considers that surgical measures for tuberculous spine disease are a great advance over conservative treatment, but should be restricted to selected cases. Undoubtedly they shorten the period of disability. Not only may existing deformity be prevented from becoming exaggerated, but also deformity itself may be prevented by surgical measures. Too early reliance cannot be placed on the strength of the bone graft. It takes time for the splint to become securely fixed by permanent callus. External support must not be disregarded for many months following the operation, otherwise deformity may ultimately occur. Even with post-operative protective treatment for a period of six or more months, the duration of treatment is much shorter than the average duration under non-operative methods. Success of bone transplantation for the cure of tuberculous spine disease depends on the proper implantation of the bone splint into the diseased and normal contiguous vertebræ. Essential to the success is the careful protective after-treatment for a period of months.

T. R. WHIPHAM.

Pott's paralysis: restoration by Albee's operation (*New York Med. Journ.*, 1914, c, p. 174).—A. J. Davidson.—The operation performed on a child 5 years of age was as follows: An incision was made over the spinous processes from the ninth dorsal to the fourth lumbar. The spinous processes of the tenth, eleventh, and twelfth dorsal, and first, second, and third lumbar vertebræ were divided into halves, and the interspinous ligaments were also divided; into the cavity a graft of 5 in. long and 1 in. wide and $\frac{1}{4}$ in. thick from the left tibia was inserted. Recovery was complete. The paralysis disappeared. A similar operation, with equal success, was performed on a child, aged 11 years.

F. R. B. ATKINSON.

The mechanics of a plaster-of-Paris cast in fixed lateral curvature of the spine (*Journ. Amer. Med. Assoc.*, 1914, LXIII, p. 2119).—E. G. Abbott gives detailed instructions as to the correction of deformities in cases of lateral curvature by means of straps and the proper adjustment of plaster-of-Paris jackets by the insertion of pads in correct anatomical positions.

T. R. WHIPHAM.

Recurrent spondylolisthesis with paralysis: bone-splint transplantation (*Journ. Amer. Med. Assoc.*, 1915, LXIV, p. 24).—E. W. Ryerson.—In the latter part of February, 1913, a strong and healthy girl, aged 15 years, was carrying another girl in her arms when she suddenly felt

a pain in her back and fell to the floor in a faint. When she awoke there was a severe pain in the lower part of her back, but after a time, with some assistance, she was able to walk home. For a week the pain continued, though less severe, and she was able to go to school, but on the eighth day her legs grew weak and began to feel numb. A week later she was unable to walk at all, and pain radiated down the back of the thighs and legs. The knee-jerks were increased, a slight ankle clonus was present, and the condition was one of spastic paraplegia. It was thought that possibly a vertebral tuberculosis might be present, with pressure on the cord. A double Buck's extension was applied to relieve the painful flexion of the knees. In a few days the paralysis had disappeared, and the child was sent to hospital to have an artificial ankylosis of the vertebræ made by the Albee method. On examination, however, no evidence of spinal tuberculosis could be found, and it seemed probable that the condition was due to a mechanical cause. An actual forward displacement of the fifth lumbar was not considered as likely as a protrusion of the intervertebral disc, although no history of a sideways bending at the time of the accident could be elicited. The patient, after a week of observation, was allowed to go home, in the belief that the trouble would not recur without severe exertion. She was cautioned to avoid lifting any weights and to keep quiet for some weeks. For a week at home she remained well, but the next day she stumbled over some obstacle on the floor and the paralysis recurred. The Buck's extension once more rapidly relieved the paralysis, and a plaster jacket was applied, fitting very low over the hips. A few days later an attack of ptomaine poisoning occurred, and the jacket was removed by the family physician on account of the distention of the abdomen. Now began a series of attacks of paralysis, averaging one every ten days until January, 1914. A small and inefficient commercial brace had been applied some time before, but it did no good. In February no paralysis existed, and the reflexes were normal. On bending her backward in bed, exaggerating the lumbar lordosis, the spinous process of the fifth lumbar vertebra could be felt to move forward abnormally far on the sacrum. This caused pain in the back and a tingling and pricking sensation in the feet. On bending the body forward, obliterating the lumbar lordosis, immediate relief was felt, and the child stated that this occurred habitually on similar movements. On March 11 a splint was cut from the left tibia, curved slightly to fit the lumbar lordosis and the sacrum, and long enough to reach from the third lumbar process to the third sacral. The lumbar and first two sacral spinous processes were readily split, but the third sacral was merely a small projection, so a groove was cut out bodily in this region. The splint was sewed in with braided silk sutures, which were inserted deeply and tied very tightly. A layer of the lumbo-sacral fascia was sewed over the whole splint, covering both splint and silk sutures. The girl was placed in an ordinary bed and kept recumbent for three weeks, when against orders she began to sit up when the nurse was out of the room. April 7 she went home, and April 21 began to walk about. Her back felt perfectly strong until June 4, when something gave way, causing severe pain but no paralysis. Examination showed that the upper tip of the splint had become loosened from the third lumbar spinous process. The knee-jerks were normal, there was no ankle clonus and sensation and motion were undisturbed. There was crepitus at the tip of the splint when the back was moved, and the pain was said to be quite severe on such motion. Later the upper end of the splint was firmly reattached by drilling both splint and third lumbar spinous process and tying with silk. She is now sitting up in a plaster

jacket without any symptoms referable to the original difficulty. The spine seems strong and the splint is apparently firmly fixed.

T. R. WHIPHAM.

A case of rotary dislocation of the atlas (*Boston Med. and Surg. Journ.*, 1914, CLXXI, p. 822).—**J. J. Morton**.—The boy was aged 12 years, and the dislocation was successfully reduced.

F. R. B. ATKINSON.

Two cases treated by rib transplantation (*Med. Press*, 1915, I, p. 192).—**W. I. de C. Wheeler**.—The first case was that of a child, aged 4 years, suffering from congenital dislocation of the hip, which was unsuccessfully treated by Lorenz's method. The upper and posterior rim of the acetabulum was freely exposed, and the bone in the region freshened by light touches of a gouge and chisel. A finger length of one of the upper ribs was removed in a position where the curve seemed suitable for reinforcing and deepening the posterior portion of the acetabulum. Before reduction of the dislocation three single sutures of fine aluminium bronze wire were passed through the bone in the required position with a strong fully curved needle. The head of the bone was then levered into place and the rib fixed with its centre at the point where the head of the bone appeared to escape most easily from the socket. The second case treated in this way was one of ever-increasing kyphosis in the mid-dorsal region of the spine.

J. ALLAN.

Coxa vara (*Journ. Amer. Med. Assoc.*, 1915, LXIV, p. 219).—**J. Ridlon** states that it is true that most cases of coxa vara appear about the period of adolescence, but since all cases do not appear at this time, and since it has not been shown that the adolescent period is an ætiological factor, it is best to avoid any such description of the condition. In the same way a history of injury is by no means always found in these cases. The author has observed two instances in which coxa vara was bilateral. In neither were the hips attacked at or near the same time, and in neither case was there any knowledge of injury. Coxa vara should be distinguished from fracture of the neck of the femur in children and adolescents. Boys are the most frequently affected, and often are fat and of the feminine type with undeveloped sexual organs.

T. R. WHIPHAM.

Coxa vara adolescentium traumatica (*Journ. Amer. Med. Assoc.*, 1915, LXIV, p. 216).—**A. Steindler** finds that after an injury between the ages of nine and sixteen, epiphyseal separation at the upper end of the femur is not only possible but highly probable to occur, with or without pre-existing or co-existing rickets, and to be followed by a deformity known as coxa vara adolescentium. The producing trauma may be, and very often is, so slight as to fail to impress the observer with its significant connection. Nevertheless, minor injuries, and especially repeated ones, are perfectly capable of producing the separation. Static influence, too, is a continuous strain. The late establishment of the deformity, after strain or injury have ceased to assert themselves, offers a striking analogy to the post-traumatic kyphosis of Kuemmel, especially since so-called molecular necrosis of detached bone and cartilage have been found microscopically in cases of traumatic coxa vara adolescentium. The loss of function in these cases is never absolute or immediate, except in cases of great violence or injury. In fact, in most cases

there is a period of functional integrity, the impairment following later and slowly, according to the progress of the deformity. The histories of ten illustrative cases are given.

T. R. WHIPHAM.

Separation of the epiphysis of the small trochanter of the femur (*Journ. Amer. Med. Assoc.*, 1915, LXIV, p. 1234).—**C. R. Metcalf** reports two instances of this rarely reported injury. One occurred in a boy, aged 17 years, while playing hockey, and the other in a lad, aged 16 years, during a game of football. Both patients made a good recovery.

T. R. WHIPHAM.

Two cases of Schlatter's sprain (*Practitioner*, 1914, xciii, p. 146).—**R. Connell** describes two cases in boys of 17 years of age, caused in each instance while exercising at the vaulting-horse.

F. R. B. ATKINSON.

Review.

EXPOSÉ DES TRAVAUX SCIENTIFIQUES DE J. BABINSKI. Paris: Masson et Cie., 1913. Pp. 229.

THE author gives a short digest of his work in all the fields of neurology which he has enriched by his labours. Not more striking than the pioneer character of much of the work is its wide range. In these pages is discussed practically every aspect of organic and functional disease of the nervous system.

By far the most important part of Babinski's work is purely clinical, and consists in the discovery and elaboration of physical signs, some of which form the criteria in the differentiation of organic from functional nervous disease.

The volume contains a *résumé* of his views on the tendon reflexes and on the still more interesting cutaneous reflexes. It is interesting to note that Babinski still includes "le signe de Babinski," the extensor response of English neurologists, among the latter, although recent work by Marie and Foix and many others has shown that it is by no means purely cutaneous, but can be elicited by stimuli applied to deep structures.

Dealing with contracture, he points out that the flexed condition of the legs in many cases of spastic paraplegia, constitutes an example of a clinical type as definite as the extended form of spastic paralysis, and "paraplégie en flexion" cannot be dismissed as merely differing from "paraplégie en extension" in the presence in the former of contracture. It is not possible within the limits of a short review to go into the characteristics of each type, but it may be remarked that the causative lesion in each instance has certain characters confirming the hypothesis that the conditions are definitely separable.

The concluding chapters are devoted to Babinski's views on hysteria, which do not need mention here.

F. M. R. W.